

# Mineral Industry Surveys

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## VANADIUM IN APRIL 2000

According to Metal Bulletin, U.S. ferrovanadium prices during April ranged from \$6.00 to \$6.50 per pound of vanadium content, compared with \$4.90 to \$6.60 in March. The range for European ferrovanadium prices was \$11.10 to \$12.90 per kilogram in April. In March, European ferrovanadium prices ranged from \$12.40 to \$13.50. For vanadium pentoxide, the April range as published by Metal Bulletin was \$2.15 to \$2.60 per pound, while in March it was \$2.30 to \$2.65 per pound.

Officials at Xstrata AG announced that workers at the

company's Vantech operation began a strike on April 14 in a wage dispute. Although operations at the plant were halted, the company expected to make up any lost production of vanadium pentoxide and ferrovanadium (Metal Bulletin, 2000).

### Reference Cited

Metal Bulletin, 2000, Vantech workers go on strike in pay dispute: Metal Bulletin, no. 8469, April 20, p. 11.

TABLE 1  
U.S. CONSUMPTION AND CONSUMER STOCKS OF VANADIUM, BY FORM 1/

(Kilograms, contained vanadium)

	1999 p/		2000			
			March		April	
	Consumption	Stocks	Consumption	Stocks r/	Consumption	Stocks
Ferrovanadium 2/	3,370,000	303,000	295,000 r/	280,000	267,000	289,000
Vanadium-aluminum alloy	W	13,100	W	12,000	W	12,400
Other 3/	460,000	9,790	40,200 r/	9,040	36,400	9,330
Total	3,830,000	326,000	335,000 r/	301,000	303,000	311,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes other vanadium-iron-carbon alloys as well as vanadium oxides added directly to steel.

3/ Includes other vanadium alloys, vanadium metal, vanadium pentoxide, vanadates, chlorides, other specialty chemicals, and items indicated by symbol "W."

TABLE 2  
U.S. CONSUMPTION OF VANADIUM, BY END USE 1/

(Kilograms, contained vanadium)

	1999 p/	2000		
		March	April	Year to date
Steel:				
Carbon	1,160,000	109,000 r/	99,400	405,000
High-strength low-alloy	949,000	88,100 r/	82,200	329,000
Stainless and heat-resisting	81,500	W	W	W
Full alloy	840,000	67,300 r/	49,600	268,000
Tool	343,000	W	W	W
Total steel	3,370,000	306,000 r/	273,000	1,170,000
Superalloys	15,400	1,510	1,370	6,000
Miscellaneous and unspecified 2/	443,000	26,800	29,100	99,500
Total consumption	3,830,000	335,000 r/	303,000	1,270,000

p/ Preliminary. r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Total steel."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes cast irons, alloys excluding steel and superalloys, chemical and ceramic uses, and other miscellaneous and unspecified uses.

TABLE 3  
U.S. IMPORTS AND EXPORTS OF ALUMINUM-VANADIUM MASTER ALLOY AND  
VANADIUM METAL, INCLUDING WASTE AND SCRAP 1/

(Kilograms, gross weight)

	Aluminum-vanadium master alloy		Vanadium metal, including waste and scrap	
	Quantity	Value	Quantity	Value
Imports for consumption:				
1999	1,210,000	\$1,680,000	30,400	\$779,000
2000:				
January	--	--	2,930	81,800
February	--	--	473	19,800
March:				
China	--	--	250	3,750
Germany	--	--	36	20,800
Russia	--	--	1,280	59,900
United Kingdom	--	--	1	2,940
Total	--	--	1,560	87,300
Year to date	--	--	4,970	189,000
Exports:				
1999	514,000	6,440,000	177,000	3,200,000
2000:				
January	49,700	756,000	--	--
February	51,900	756,000	17,400	261,000
March:				
Brazil	4,250	125,000	--	--
Canada	29,400	383,000	--	--
Germany	--	--	30	5,610
Israel	5,150	73,600	--	--
Japan	4,830	62,700	--	--
United Kingdom	--	--	10	9,150
Total	43,700	644,000	40	14,800
Year to date	145,000	2,160,000	17,500	276,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 4  
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND  
OTHER OXIDES AND HYDROXIDES OF VANADIUM 1/

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) 2/		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Imports for consumption:						
1999	1,930,000	\$20,700,000	208,000	\$1,920,000	--	--
2000:						
January	89,100	765,000	30,000	237,000	--	--
February	157,000	1,330,000	95,500	782,000	--	--
March:						
Austria	38,300	375,000	--	--	--	--
Canada	14,700	126,000	--	--	--	--
China	15,900	161,000	--	--	--	--
Czech Republic	32,000	321,000	--	--	--	--
Germany	--	--	2,000	17,700	--	--
South Africa	16700	136000	82,200	675,000	--	--
United Kingdom	--	--	--	--	4,500	\$76,200
Total	118,000	1,120,000	84,200	693,000	4,500	76,200
Year to date	364,000	3,220,000	210,000	1,710,000	4,500	76,200

See footnotes at end of table.

TABLE 4--Continued  
U.S. IMPORTS AND EXPORTS OF FERROVANADIUM, VANADIUM PENTOXIDE (ANHYDRIDE) AND  
OTHER OXIDES AND HYDROXIDES OF VANADIUM 1/

(Kilograms, contained vanadium)

	Ferrovanadium		Vanadium pentoxide (anhydride) 2/		Other oxides and hydroxides of vanadium	
	Quantity	Value	Quantity	Value	Quantity	Value
Exports:						
1999	213,000	\$3,180,000	747,000	\$4,270,000	69,700	\$656,000
2000:						
January	--	--	29,800	163,000	7,790	48,900
February	5,730	80,000	65,800	312,000	26,900	172,000
March:						
Canada	--	--	--	--	4,390	58,900
Germany	--	--	16,500	78,200	--	--
Mexico	2,640	88,000	--	--	--	--
Switzerland	--	--	18	3,010	--	--
Taiwan	--	--	--	--	532	4,730
Total	2,640	88,000	16,500	81,200	4,920	63,600
Year to date	8,370	168,000	112,000	556,000	39,600	285,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ May include catalysts containing vanadium pentoxide.

Source: Bureau of the Census.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF VANADIUM-BEARING ASH, SLAG 1/

(Kilograms, contained vanadium pentoxide)

	Ash and residues		Ash and residues (not from the manufacture of iron and steel)		Slag, from the manufacture of iron and steel	
	Quantity	Value	Quantity	Value	Quantity	Value
1999	1,800,000	\$6,940,000	2,700,000	\$1,360,000	1,150,000	\$1,740,000
2000:						
January	95,900	74,500	501,000	170,000	--	--
February	111,000	103,000	248,000	134,000	--	--
March:						
Canada	5,070	20,000	284,000	122,000	--	--
Mexico	173,000	166,000	--	--	--	--
Total	178,000	186,000	284,000	122,000	--	--
Year to date	384,000	364,000	1,030,000	426,000	--	--

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MISCELLANEOUS VANADIUM CHEMICALS 1/

(Kilograms, contained vanadium)

	Sulfates		Vanadates	
	Quantity	Value	Quantity	Value
1999	8	\$14,300	174,000	\$1,640,000
2000:				
January	--	--	35,500	197,000
February	475	4,570	312	11,800
March:				
Germany	--	--	16,400	80,800
South Africa	--	--	26,000	140,000
Total	--	--	42,500	221,000
Year to date	475	4,570	78,300	430,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Bureau of the Census.